

REMARKS

I. Telephone conference of December 20, 2007.

Applicants respectfully thank the Examiner for discussing this case by telephone with Applicant's attorney on December 20, 2007. As discussed by telephone, Applicants respectfully believe that species 3, as worded, corresponds to claims 1-36 (explained in more detail below). As previously noted, Applicants respectfully seek to continue cooperating with the Examiner to expeditiously resolve any issues.

II. Provisional election.

Claims 1-42 are pending in the present application and have been respectfully subjected to a restriction requirement.

This election is being made with traverse and without prejudice to Applicants' rights with respect to any of the claims, including the right to file divisional applications thereon.

Applicants hereby provisionally elect Species 3, drawn to a device having a rotatable portion with two axes of rotation combined with a fiber optic system.

Applicants respectfully note that claims 1-36 are readable on the provisionally elected species. For the Examiner's convenience, Applicants respectfully include the tables below to summarize how each of the independent claims 1, 21, 26, 30, 36 reads on the provisionally elected Species 3:

Species 3 – A device having a rotatable portion with two axes of rotation combined with a fiber optic system.		
Claim No.	Limitations of Claim	Explanation of how the limitation reads on Species 3
Claim 1	<p>A laser based coordinate measuring device for measuring a position of a remote target, the measuring device comprising:</p> <p>a stationary portion having at least a first laser radiation source and at least a first optical detector;</p>	Corresponds to “a device”
	<p>a rotatable portion that is rotatable with respect to the stationary portion; and</p>	Applicants respectfully assert that this is a broad, open-ended limitation, that encompasses the “two axes of rotation” of species 3. It is respectfully noted that the language of the claim does not limit the rotation to any particular number of axes, but includes two axes of rotation. Element 190 in Figure 1 is one possible example of this rotatable portion.
	<p>at least a first optical fiber system for optically interconnecting the first laser radiation source and the first optical detector with an emission end of the first optical fiber system, the emission end disposed on the rotatable portion for emitting laser radiation to the remote target and for receiving laser radiation reflected from the remote target, wherein an emission direction of the laser radiation is controlled according to the rotation of the rotatable portion.</p>	Applicants respectfully assert that this limitation corresponds to the “fiber optic system” defined in species 3. One possible example of this fiber optic system would be the system comprising elements 112, 305, 306, as seen in present Figures 1 and 3.

Species 3 – A device having a rotatable portion with two axes of rotation combined with a fiber optic system.		
Claim 21	A laser based coordinate measuring device, comprising:	Corresponds to “a device”
	a rigid structure rotatable about two substantially orthogonal axes;	Applicants respectfully assert that this limitation clearly corresponds to the “rotatable portion with two axes of rotation” of species 3. Similar to claim 1, structure 190 is one possible example of this limitation.
	a laser radiation source disposed off the rigid structure to provide laser radiation;	
	an optical detector disposed off the rigid structure;	
	a retroreflective target disposed remote from the rigid structure;	
	a first optical fiber path optically coupled with the laser radiation source to transmit laser radiation from the laser radiation source to the rigid structure, the first optical fiber path having an end disposed on the rigid structure for emitting the laser radiation to the retroreflective target according to an orientation of the rigid structure and for receiving retroreflected radiation reflected by the retroreflective target; and	Applicants respectfully assert that this fiber optic path reads on the fiber optic system of species 3. As noted above, one possible example of this fiber optic path includes elements 112 and 306, as seen in Figures 1 and 3.
	an optical coupler optically connecting the optical detector with the first optical fiber path to receive the retroreflected radiation.	

Species 3 – A device having a rotatable portion with two axes of rotation combined with a fiber optic system.		
Claim 26	A laser based coordinate measuring device for measuring a position of a remote target, the measuring device comprising:	Corresponds to “a device”
	a stationary portion having at least a first laser radiation source;	
	a rotatable portion that is rotatable about first and second axes of rotation with respect to the stationary portion; and	“rotatable portion” Applicants respectfully assert that this limitation clearly corresponds to the “rotatable portion with two axes of rotation” of species 3. Similar to claim 1, structure 190 is one possible example of this limitation.
	an optical fiber path for optically interconnecting the first laser radiation source with the rotatable portion, wherein a first portion of the optical fiber path is disposed along the first axis and a second portion of the optical fiber path is disposed along the second axis.	Applicants respectfully assert that this fiber optic path reads on the fiber optic system of species 3. Figure 16 generally shows one possible way in which the fiber path can be disposed along the rotation axes.

Species 3 – A device having a rotatable portion with two axes of rotation combined with a fiber optic system.		
Claim 30	A laser based coordinate measuring device, comprising:	Corresponds to “a device”
	a structure rotatable about two substantially orthogonal axes;	Applicants respectfully assert that this limitation clearly corresponds to the “rotatable portion with two axes of rotation” of species 3. Similar to claim 1, structure 190 is one possible example of this limitation.
	a laser radiation source disposed off the rotatable structure to provide laser radiation;	
	a retroreflective target disposed remote from the rotatable structure, the retroreflective target having a pattern thereon;	
	an optical system for directing the laser radiation from the laser radiation source to the rotatable structure and then to the retroreflective target in accordance with the rotation of the rotatable structure, the retroreflective target reflecting the laser radiation to the rotatable structure; and	Applicants respectfully assert that this is a broad, open ended limitation, that encompasses the “optical fiber path” of species 3. We note that the language of the claim does not limit the optical system to any particular system, and an optical fiber system is one particular example of an “optical system” as claimed here. One possible embodiment of this optical system would include structures 112 and 306, as seen in present Figures 1 and 3.
	an orientation camera optically coupled with the reflected laser radiation to determine an orientation of the retroreflective target, the orientation camera including a detector and a lens system that forms an image of the pattern on the detector, wherein the orientation camera is disposed on the rotatable structure.	

Species 3 – A device having a rotatable portion with two axes of rotation combined with a fiber optic system.		
Claim 36	A laser based coordinate measuring system device, comprising:	Corresponds to “a device”
	a structure rotatable about two substantially orthogonal axes;	Applicants respectfully assert that this limitation clearly corresponds to the “rotatable portion with two axes of rotation” of species 3. Similar to claim 1, structure 190 is one possible example of this limitation.
	a laser radiation source disposed off the rotatable structure to provide laser radiation;	
	a retroreflective target disposed remote from the rotatable structure;	
	an optical system for directing the laser radiation from the laser radiation source to the rotatable structure and then to the retroreflective target in accordance with the rotation of the rotatable structure, the retroreflective target reflecting the laser radiation to the rotatable structure; and	Applicants respectfully assert that this is a broad, open ended limitation, that encompasses the “optical fiber path” of species 3. We note that the language of the claim does not limit the optical system to any particular system, and an optical fiber system is one particular example of an “optical system” as claimed here. One possible embodiment of this optical system would include structures 112 and 306, as seen in present Figures 1 and 3.
	an orientation camera disposed on the rotatable structure and optically coupled with the reflected laser radiation to determine three orientational degrees of freedom of the retroreflective target.	

Applicants also respectfully note that no "serious burden" is present in examining the small number of claims 37-42 related to the non-elected species in addition to the claims of the provisionally elected species, and cite the following:

803 Restriction - When Proper

Under the statute an application may properly be required to be restricted to one of two or more claimed inventions only if they are able to support separate patents and they are either independent (MPEP § 806.04 - § 806.04(i)) or distinct (MPEP § 806.05 - § 806.05(i)).

If the search and examination of an entire application can be made *without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions.*

III. Conclusion.

The foregoing is fully responsive to the Office Action.

If there are any charges with respect to this amendment, or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicant's attorneys.

Respectfully submitted,

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